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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,909	01/23/2004	Donald H. Wiseman	PIL8015.011	1908

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EXAMINER

KUNEMUND, ROBERT M

ART UNIT PAPER NUMBER

1765

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,909

Applicant(s)

WISEMAN, DONALD H.

Examiner

Robert M Kunemund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on applicants' response of November 4, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 9 to 11, 16 to 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable by Haldeman (5,461,215) in view of Ammon et al (6,117,230).

The Haldeman reference teaches an induction-heating coil in a crystal growth apparatus. The crystal growth apparatus has a means to receive a material for growth, which is to be heated. The heating means is an induction coil, note col. 1 lines 1-20. The induction means is a Litz coil, note col. 3 lines 2-55. The coils are cooled by water, which is allowed to flow through the Litz coil, note, and cite supra. The coils are in casings, which has two separate ends. The coils are insulated for each other note col. 4. The sole difference between the instant claims and the prior art is the housing means. However, the Ammon et al reference teaches a czochralski apparatus where there is a housing the surrounds the heating coils, note, figs. It would have been obvious to one of ordinary skill in the art to modify the Haldeman reference by the teachings of the Ammon et al reference to include a housing in order to prevent the heater from deforming and creating impurities in the process.

Claims 3, 5 to 8, 12 to 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldeman in view of Ammon et al .

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The Haldeman and Ammon et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the construction of the coil. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine the optimum, operable means of construction, such as controllers, encasements, tie downs in the Haldeman reference in order to protect the coils during growth and secure the coils so that the coils do not cause vibrations during the growth which would ruin the crystals.

Claims 4 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldeman in view of Ammon et al.

The Haldeman and Ammon references are relied on for the same reasons as stated, supra, and differ from the instant claims in the method of growth. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine the optimum, operable means of growth which best use the Litz coils in the Haldeman reference in order to decrease energy use in the crystal growing methods. Further, the efficiency of the coils would inherently be similar as there is seen no difference between the Litz coils of the claims and the prior art.

Applicant's arguments with respect to claims 1 to 28 have been considered but are moot in view of the new ground(s) of rejection.

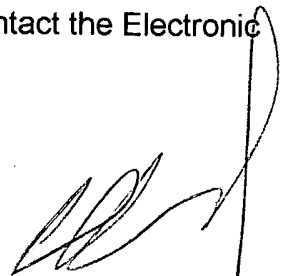
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M Kunemund whose telephone number is 571-272-1464. The examiner can normally be reached on 8 hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMK



ROBERT KUNEMUND
PRIMARY EXAMINER